



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB1999-0250

December 15, 1999

Fred Patron
U.S. Department of Transportation
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, OR 97301

Re: Biological Opinion for the Davis Slough Bridge Replacement
Corps # 99-618
DSL EA/RF-16700

Dear Mr. Patron:

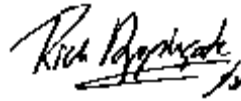
The National Marine Fisheries Service (NMFS) has enclosed the Biological & Conference Opinion that addresses your proposed project to replace the Davis Slough Bridge in Coos County, Oregon. This project is described in your Biological Assessment submitted with your July 22, 1999, request for consultation. The Federal Highway Administration is the lead agency and ODOT is the designer and builder of the project.

This opinion considers the potential effects of the project on Oregon coast coho salmon (*Oncorhynchus kisutch*) which occur in the proposed project area. Oregon coast coho salmon were listed as threatened under the Endangered Species Act on August 10, 1998 (63 FR 24998) and critical habitat was proposed on May 10, 1999 (64 FR 24998). This opinion constitutes formal consultation for the Oregon coast coho salmon.



If you have any questions regarding this letter, please contact Nancy Munn of my staff in the Oregon State Branch Office at (503) 231-6269.

Sincerely,

A handwritten signature in black ink, appearing to read "William Stelle, Jr.", with a stylized flourish at the end.

**William Stelle, Jr.
Regional Administrator**

cc: Rose Owens - ODOT (attachment)
 Randy Floyd - ODOT (attachment)
 Alan Lively - ODOT (attachment)
 Randy Reeve - ODFW (attachment)
 Ron Marg - ACOE (attachment)
 Mike McCabe - ODSL (attachment)

Endangered Species Act - Section 7
Consultation

Biological and Conference Opinion

Davis Slough Bridge (#08282) Replacement
Coos County

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: December 15, 1999

Refer to: OSB1999-0250

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I. BACKGROUND

On July 22, 1999, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for a bridge replacement over Davis Slough in Coos County, Oregon. Davis Slough is part of the Coos Bay estuary, and the bridge is located on US 101 about 5 miles south of the City of Coos Bay. The FHWA is the lead agency and Oregon Department of Transportation (ODOT) has designed the project and will administer the construction contract. This Biological Opinion (Opinion) is based on the information presented in the BA and the result of the consultation process.

FHWA/ODOT has determined that the Oregon coast coho salmon (*Oncorhynchus kisutch*) (OC coho) may occur within the project area. Since critical habitat has been proposed for OC coho salmon, this Opinion serves as the NMFS Conference Opinion until such time that NMFS published a final critical habitat rule.

FHWA/ODOT is proposing to replace the existing bridge and build a new bridge along the same alignment. The old bridge has a wooden post substructure that has significant decay and insect infestation, and the bridge deck has signs of settling and cracking. The highway will be closed at this location during construction, and traffic will be detoured around the site. The new bridge will be a pile-supported 4 span structure, 441 feet long by 45 feet wide.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). FHWA/ ODOT determined that the proposed action was likely to adversely affect the OC coho.

This Opinion reflects the results of the consultation process. The consultation process has involved a site visit and correspondence and communications to obtain additional information and clarify the BA. As appropriate, modifications have been made to the original proposal to reduce impacts to the indicated species. This has included reducing the amount of riprap required; replacing the bridge of the same centerline as the existing bridge; and using a detour to eliminate the need for a temporary work bridge.

The objective of this Opinion is to determine whether the action to replace the Davis Slough Bridge is likely to jeopardize the continued existence of the OC coho or destroy or adversely modify proposed critical habitat.

II. PROPOSED ACTION

The proposed action involves replacing the existing bridge on US 101 over Davis Slough. The bridge is located about 5 miles south of the City of Coos Bay. The existing bridge is located about 825 feet upstream of the confluence of Davis Slough with Isthmus Slough. Isthmus Slough is a tributary to Coos Bay.

The existing bridge is 437 feet long and 20 feet wide. It consists of 16 spans supported by 17 bents, 15 of which have a total of 194 pilings in the wetted channel of Davis Slough. The southern end of the bridge has been constructed on an approach causeway made of fill that extends more than 660 feet over former salt marsh (estuarine) wetland.

The new bridge will consist of four spans for a total length of 444 feet, and a width of 43 feet. It will be supported on five bents, three of which will be in the wetted channel of the slough. Each span will consist of precast, prestressed, concrete box beams. Each of the pilings in the slough will have eight steel pipe pilings, and the two end bents will have six pilings each. A concrete piling cap will be poured at the top of each piling; no concrete will be poured at or below water level. The new bridge will have a concrete deck and bridge rail. Construction will require six concrete pours for the piling caps and bridge deck. The center line of the new bridge will be the same as the existing bridge. The new bents will be offset from existing pilings.

The new bridge abutments will be protected from wind-wave erosion through the placement of 200 cubic yards of Class 50 riprap. Riprap will only be placed around the abutments in areas considered scour critical. Toe trenches will not be dug in the slough to hold the riprap. Instead, sheet pilings will be driven around the bottom of the rock slope to hold the rock in place.

The deck surface of the new bridge will be at a higher elevation than the existing bridge. The south approach surface will be elevated to match the deck elevation. This will require the addition of 160 cubic yards of fill on the existing approach, which will require wider embankments.

Construction Timing

Construction will begin in the fall of 2000, and be completed by late spring 2001. The sequence of construction will be:

- One bridge span will be removed at a time.
- New pilings will be driven from the adjacent existing bridge span. An impact pile driver will probably be used. Piling caps will be poured on top of the new pilings.
- Existing timber pilings will be removed by breaking them off at the mud line using a crane, or cutting them off at low tide. Jetting to remove the existing timber pilings will not be allowed.
- Work from the bridge will be conducted from the middle to the end.
- New approach roadway embankments will be constructed.

- Riprap will be placed around the new end bents.
- New bridge deck spans will be constructed by working from the ends to the middle.

Staging

- A staging area has not been selected at this time. However, the contractor will stage fuels and other potentially hazardous materials at least 150 feet from the edge of the Davis Slough, any of its tributaries, or any wetlands. Vehicles will not be stored overnight within 150 feet of Davis Slough.
- A temporary work bridge will not be needed.

Habitat Enhancement

The action includes the restoration of approximately 0.23 acres of filled salt marsh located immediately adjacent to the south approach of the bridge. The intent of this work is to compensate for estuarine wetland impacts and loss of rearing habitat for salmonids associated with the proposed construction of the replacement bridge. Fill material that had previously been placed on top of salt marsh wetland during the construction of the existing roads will be removed and graded to provide hydrology and inundation necessary to restore estuarine wetland habitat. Fill material will be sufficiently excavated to restore the daily tidal regime to the area. The portion of the fill immediately adjacent to the junction of US 101 and the connector road will be excavated to construct a water quality detention basin. An upland buffer around the restored wetland will be planted with Sitka spruce and coyote brush.

III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The Oregon coast (OC) coho salmon Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on August 10, 1998 (63 FR 42587). Biological information on OC coho salmon may be found in Weitkamp et al. (1995). Critical habitat was proposed for the OC coho salmon on May 10, 1999 (64 FR 24998). Proposed critical habitat for OC coho salmon consists of all waterways and naturally impassable barriers and several dams that block access to former coho salmon habitats. In the proposed rule, NMFS recognizes that estuarine habitats are critical for coho salmon and has included them in the designation. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: shade, sediment, nutrient or chemical regulation, streambank stability, and input of large woody debris or organic matter.

OC steelhead and OC cutthroat trout also occur in the project area. OC steelhead was designated as a candidate species on March 19, 1998 (63 FR 13347) and OC cutthroat trout was designated as a candidate species on April 5, 1999 (64 FR 16397). Neither ESU is likely to become listed prior to the completion of this project, therefore they are not considered further in this Opinion.

IV. EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) defining the biological requirements and current status of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. If NMFS finds that the action is likely to jeopardize the listed species, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat it must identify any reasonable and prudent measures available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for rearing of the OC coho salmon under the existing environmental baseline.

A. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list OC coho for ESA protection and also considers new data available that is relevant to the determination (Weitkamp et al. 1995).

The relevant biological requirements are those necessary for OC coho salmon to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their

capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful rearing. The current status of the OC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed and, in some cases, their status may have worsened.

B. Environmental Baseline

The biological requirements of OC coho salmon are currently not being met under the environmental baseline. Their status is such that there must be a significant improvement in the environmental conditions they experience including the condition of any designated critical habitat (over those currently available under the environmental baseline). Any further degradation of these conditions would have a significant impact due to the amount of risk the listed salmon presently face under the environmental baseline.

The current range-wide status of the identified ESU may be found in Weitkamp et al. (1995). The identified action will occur within the range of OC coho salmon. The defined action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities include the immediate watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the bed and bank of the Davis Slough extending to all tidally influenced habitat within the slough and upland areas disturbed by the action. Other areas of the Coos River watershed and Coos Bay are not expected to be directly or indirectly impacted.

The action area consists of deep water habitat in the Davis Slough channel with fringe mud flats and vegetated high salt marsh habitat types. Davis Slough is a brackish estuary system that is tributary to Isthmus Slough, which is a southern tributary of Coos Bay. Davis Slough extends 1 mile upstream of the bridge and is bordered by salt marsh and emergent wetlands. Davis Creek extends upstream from the slough.

Davis Slough is 320 feet wide underneath the existing bridge. The slough experiences 4 to 5 foot tidal variations at the bridge. During low tides, the flowing channel is considerably narrower and the mud bottom of the slough is exposed. The slough is approximately 11.5 feet deep from high water elevation to the bottom of the thalweg at the bridge. The muddy bottom of the slough near the bridge is devoid of any structure or large wood except for the timber pilings of the existing bridge. The slough consists of slow moving, low gradient, muddy water with no pools or riffles, and is a depositional area for sediment.

Davis Slough is not included in the 1998 Oregon Department of Environmental Quality 303(d) list for water quality limited waters. Tidal portions of Isthmus Slough are listed as water quality limited for dissolved oxygen.

Fish present in the action area include a native run of coho salmon, a few steelhead, searun cutthroat trout, and native chinook salmon. Adult coho salmon migrate upstream through the action area in the fall. The slough within the project vicinity provides rearing habitat for coho smolts from April to June during spring outmigration. The in-water work period for Davis Slough is October 1st to February 15th.

Based on the best available information on the current status of OC coho salmon range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of OC coho salmon are substantially below historic numbers, although coho salmon populations in the Coos, Coquille, and Umpqua River basins are relatively abundant (63 FR 42587). Coho salmon in the Coos River basin are considered to be at moderate risk of extinction (Weitkamp et al. 1995). Recent droughts and change in ocean production have probably reduced run sizes. River basins have degraded habitats resulting from agricultural and forestry practices, water diversions, urbanization, mining, and severe recent flooding. The following habitat indicators are either at risk or not properly functioning within the action area: summer water temperatures, turbidity/sediment, chemical/nutrient contamination, large woody debris/structure, salt marsh habitat quality, channel complexity, bank condition, road density/location, and disturbance. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of OC coho salmon.

V. ANALYSIS OF EFFECTS

A. Effects of Proposed Actions

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). After determining the potential impacts of the action, efforts were made to avoid, minimize, and mitigate these impacts. Then, the net effects of action are expressed in terms of the expected effect - restore, maintain, or degrade - on aquatic habitat indicators in the project area. This analysis is summarized below.

The proposed action has the potential to cause the following impacts to OC coho salmon or proposed critical habitat:

- Dismantling the existing timber structure may result in the discharge of wood preservatives into Davis Slough.

- Removal of the existing timber pilings may injure or kill rearing coho while the pilings are being cut off and removed. This activity may also interfere with fish passage.
- Excavation and removal of the existing abutments will increase turbidity and suspended solids in the short term, which could interfere with rearing and migratory habitat downstream and upstream of the project (depending on tides).
- Pile driving could kill rearing fish, increase turbidity and interfere with fish passage. The most likely response would be a displacement of fish. The noise vibration of the pounding would likely cause them to avoid the area (Feist 1991). Also, the 24 new pilings driven into the bottom of the slough would remove about 0.001 acre of shellfish habitat from Davis Slough.
- Pouring concrete to form the new piling caps and the bridge deck has the potential to cause acute toxicity problems in the slough if spilled.
- Driving the sheet piling and placing riprap around the new abutments will result in the loss of high quality rearing habitat and will increase turbidity. Placement of riprap around the new bridge abutments will remove an estimated 0.01 acre of salt marsh vegetation and associated fish rearing habitat. The riprap will be held in place with sheet piling that will be driven vertically into the substrate at the foot of the riprap. Use of sheet piling to hold the riprap avoids the need for toe trenches to anchor the riprap and reduces the area of impact.
- Widening the embankments on the south end of the bridge to accommodate the raised approach roadway will result in the loss of rearing habitat following the placement of fill on jurisdictional salt marsh wetland (0.07 acres).
- Operation of machinery on and near the bridge will increase the risk of a hazardous spill in the slough and associated wetlands.

The effects of these activities on listed fish and aquatic habitat factors have been limited by utilizing construction methods and approaches that are intended to avoid or minimize impacts. These include:

- The extent of riprap will be minimized through the use of sheet piling (instead of a toe trench) to hold the toe of the rock. Use of sheet piling will reduce the area of estuarine impact from riprap to approximately 0.02 acres, approximately half of which is salt marsh rearing habitat.
- Bridge and highway plans to add lanes were eliminated to avoid impacts to the estuary.
- The bridge will be replaced within the same centerline as the existing bridge to avoid additional impacts to the salt marsh.
- The existing western connector road will be used to detour traffic during construction to minimize wetland impacts by eliminating the need for a temporary bridge or new detour road.
- All in-water work will be scheduled during the in-water work period of October 1st to February 15th, as established by Oregon Department of Fish and Wildlife, to minimize impacts to fish.
- An erosion control plan will be implemented that includes silt fences and sediment filters and routine monitoring.
- Hazardous materials, including fuel, will not be stored or transferred within 300 feet of the Davis Slough or Isthmus Slough. No staging areas or parking areas will occur within 100 feet of either water body, other than the designated equipment access points shown on Figure 5 in the Biological Assessment.

- The direct discharge of sediments or pollutants into the stream will be minimized to the greatest extent practicable. Measures described in the terms and conditions of the incidental take statement minimize the risk.

The action also includes habitat restoration to mitigate for the 0.01 acres of salt marsh habitat that would be permanently impacted by the action, and for impacts to water quality.

- Restoration of filled salt marsh will result in a net increase in salt marsh habitat available as rearing habitat. A total of about 0.23 acres of former salt marsh wetland that was covered by fill in the 1950s will be graded to elevations that will restore tidal inundation necessary for growth of salt marsh vegetation. This area will be replanted. This activity will result in a net increase in salt marsh habitat available for rearing habitat.
- A water quality detention basin will be constructed in the fill immediately adjacent to the junction of US 101 and the connector road. A total of 340 cubic yards of old fill material will be removed to create the detention basin. This activity will result in a net improvement to water quality.

For the proposed action, the NMFS expects that the effects will tend to maintain or restore each of the habitat elements over the long term, greater than one year. However, in the short term, a temporary increase of sediments and turbidity and disturbance of riparian and salt marsh habitat is expected. Fish may be killed, or more likely, temporarily displaced during the in-water work (driving and extraction of piles). The potential effects from the sum total of proposed actions are expected to restore or maintain properly functioning coho salmon habitat conditions within the action area.

B. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat has not been finally designated for the OC coho; however, it is likely to include the entire project area based on the proposed rule published on May 10, 1999 (64 FR 24049).

The proposed action will affect critical habitat. NMFS expects that the net effect of the proposed action will tend to maintain or restore properly functioning conditions in the watershed under current baseline conditions over the long term. In the short term, temporary increase of sediments and turbidity and disturbance of salt marsh habitat is expected. In the long term, no net loss of salt marsh habitat will occur. NMFS does not expect that these actions will diminish the value of the habitat for recovery or survival of OC coho.

C. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the general action area is the watersheds containing the project. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes.

Future FHWA/ODOT transportation projects that are planned in the Isthmus Slough/Davis Slough sub-basin include: Isthmus Slough Bridge #01132F replacement on Coos River Road in 2000; construction of acceleration and deceleration lanes and turn refuges along US 101 at MP 240 in 2002; Davis Slough Bridge #03168A replacement in 2003; Isthmus Slough (Coos City) Bridge #02300A replacement at Sumner Road in 2003; and the Bunker Hill intersection realignment with Isthmus Slough Bridge along US 101 in 2003. These projects are upgrading existing facilities and will not add any new facilities. Each of these projects will be reviewed through separate section 7 consultations.

A wide variety of actions occur within the watersheds defined within the BO. NMFS is not aware of any significant change in such non-Federal activities that are reasonably certain to occur. NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

VI. CONCLUSION

NMFS has determined, based on the available information, that the proposed action is expected to restore or maintain properly functioning OC coho salmon rearing habitat conditions within the action area. Consequently, the proposed action covered in this Opinion is not likely to jeopardize the continued existence of Oregon coast coho salmon or to destroy or adversely modify critical habitat. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. These effects will be balanced in the long-term through the proposed mitigation. Direct mortality from this project may occur during the in-water work.

VII. CONSERVATION RECOMMENDATIONS

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered

species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. In addition to those general minimization and avoidance measures as described in the biological assessment, the NMFS requests monitoring of the restoration site to determine whether salmonids use the site.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed species or their habitat, NMFS requests notification of the implementation of any conservation recommendations.

VIII. REINITIATION OF CONSULTATION

Consultation must be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To re-initiate consultation, ODOT should contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

IX. REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996.
(www.deq.state.or.us/wq/303dlist/303dpage.htm).

DEQ 1998. Draft 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1998.
(www.deq.state.or.us/wq/303dlist/303dpage.htm).

DSL 1996. Essential Indigenous Salmonid Habitat, Designated Areas, (OAR 141-102-030). Oregon Division of State Lands. Portland, Or. 1996.

Feist, B.E. 1991. Potential impacts of pile driving on juvenile pink (*Oncorhynchus gorbuscha*) and chum (*O. keta*) salmon behavior and distribution. University of Washington, School of Fisheries.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon.

ODFW 1996. Database -- Salmonid Distribution and Habitat Utilization, Arc/Info GIS coverages. Portland, Or. 1996. (rainbow.dfw.state.or.us/ftp/).

Weitkamp, L.A., T.C. Wainwright, G.J. Brant, G.B. Miller, D.J. Teel, R.G. Kope, and R.S. Waples. 1995. Status Review of Coho Salmon from Washington, Oregon, and California. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-NFWWC-24, 258 p.

X. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

A. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Biological Opinion has more than a negligible likelihood of resulting in incidental take of Oregon coast coho salmon because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during in-water work (lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on coho habitat or population levels. Therefore, even though NMFS expects some low

level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to within 500 feet of project activities, including the wetland restoration site.

B. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities within Davis Slough and associated wetlands, measures shall be taken to limit the duration and extent of in-water work, and to time such work to occur when the impacts to fish are minimized.
2. To minimize the amount and extent of incidental take from construction activities in or near the salt marsh, effective erosion and pollution control and revegetation measures shall be developed and implemented to minimize the movement of soils and sediment both into and within the salt marsh and slough, and to stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take from loss of salt marsh habitat and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and wetland habitat, or where impacts are unavoidable, to replace lost riparian and wetland function. Measures shall be taken to minimize the use of riprap, and to introduce new salt marsh habitat into the project area.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all plantings and mitigation sites shall be monitored and meet criteria as described below in the terms and conditions. Also, erosion control measures shall be monitored and evaluated both during and following construction.

C. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA/ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. In-water work:

- a. Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period. ODOT designs will ensure passage of fishes as per ORS 498.268 and ORS 509.605.
- b. All work within the ordinary high water mark of all anadromous fish-bearing systems, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within ODFW's in-water work period (October 1st to February 15th). Any extensions of the in-water work period will first be approved by and coordinated with ODFW and NMFS.
- c. Where riprap is necessary, only clean, non-erodible, upland angular rock of sufficient size for long-term bridge abutment protection will be employed. The extent of the riprap will be minimized through the use of sheet piling to hold the toe of the rock.
- d. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material shall be placed to maintain normal waterway configuration.
- e. No pollutant of any kind (petroleum products, fresh concrete, silt, etc.) shall come in contact with Davis Slough or associated wetlands.
- f. Place waste materials and spoils at least 100 feet from Davis Slough and away from any wetlands.
- g. Excavation at the restoration site shall be completed and vegetation established prior to opening the hydrologic connection between the restoration site and the slough.

2. Erosion and Pollution Control

An Erosion Control Plan (ECP) will be prepared by the contractor, in cooperation with the ODOT Engineer. It will be reviewed by the ODOT Engineer and implemented by the contractor. The ECP will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures will be sufficient to ensure compliance with all applicable water quality standards. The ECP shall be maintained on site and shall be available for review upon request.

- a. Erosion Control measures shall include (but not be limited to) the following:
 - i. The contractor will have the following on hand: 50 weed-free straw bales, 150 feet of unsupported silt fence, and 25 biobags.
 - ii. Temporary plastic sheeting for immediate protection of open areas (where seeding/ mulching are not appropriate), in accordance with ODOT's Standard Specifications.
 - iii. Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep unstable slopes in conjunction with seeding or prior to seeding.
 - iv. Sills or barriers may be placed in drainage ditches along cut slopes and on steep grades to trap sediment and prevent scouring of the ditches. The barriers will be constructed from rock and straw bales.
 - v. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work on exposed slopes.
- b. Effective erosion control measures shall be in-place at all times during the contract. Construction within the 5-year floodplain will not begin until all temporary erosion controls (e.g., straw bales, silt fences) are in-place, downslope of project activities within the riparian area. Erosion control structures will be maintained throughout the life of the contract.
- c. All temporarily-exposed areas will be seeded and mulched. Erosion control seeding and mulching, and placement of erosion control blankets and mats (if applicable) will be completed on all areas of bare soil within 7 days of exposure within 150 feet of waterways, wetlands or other sensitive areas, and in all areas during the wet season (after October 1). All other areas will be stabilized within 14 days of exposure. Efforts will be made to cover exposed areas as soon as possible after exposure.
- d. All erosion control devices will be inspected during construction to ensure that they are working adequately. Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional controls will be installed as necessary.
- e. If soil erosion and sediment resulting from construction activities is not effectively controlled, the Engineer will limit the amount of disturbed area to that which can be adequately controlled.

- f. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 12 cm. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.
- g. Where feasible, sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters an aquatic resource area. Silt fences or other detention methods will be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- h. A supply of erosion control materials (e.g., straw bales and clean straw mulch) will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.
- i. All equipment that is used for in water work will be cleaned prior to entering the two-year floodplain. External oil and grease will be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.
- j. On cut slopes steeper than 1:2 a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the rate.
- k. Material removed during excavation shall only be placed in locations where it cannot enter sensitive aquatic resources. Conservation of topsoil (removal, storage and reuse) will be employed.
- l. Measures will be taken to prevent construction debris from falling into any aquatic resource. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- m. ODOT actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards not to be exceeded within the Coos Basin (OAR Chapter 340, Division 41). Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed DEQ water quality standards.

- n. The Contractor will develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this PCP. The PCP shall include the following:
 - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pits operations, haul roads, equipment storage sites, fueling operations and staging areas.
 - ii. Methods for confining and removing and disposing of excess concrete, cement and other mortars. Also identify measures for washout facilities.
 - iii. A spill containment and control plan that includes: notification procedures; specific clean up and disposal instructions for different products; quick response containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
 - iv. Measures to be used to reduce and recycle hazardous and non-hazardous waste generated from the project, including the following: the types of materials, estimated quantity, storage methods, and disposal methods.
 - v. The person identified in 00280 as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractor's PCP.
- o. Areas for fuel storage and servicing of construction equipment and vehicles will be located at least 300 feet away from Davis Slough. Once the excavator is placed at the bottom of the slope, it can be refueled at that location. However, the contractor must write stringent protection measures in the Spill Prevention and Countermeasures Plan so that spill control supplies are available on the riverbank before the excavator is lowered. Overnight storage of vehicles must occur at least 150 feet away from Davis Slough.
- p. Hazmat booms will be installed in all aquatic systems where:
 - i. Significant in-water work will occur, or where significant work occurs within the 5-year floodplain of the system, or where sediment/toxicant spills are possible.
 - ii. The aquatic system can support a boom setup (i.e. the creek is large enough, low-moderate gradient).
 - iii. A significant aquatic resource occurs downstream or within the project area.¹

¹Significant aquatic resources may include estuaries, spawning areas, or rearing areas.

- q. Hazmat booms will be maintained on-site in locations where "diapering" of vehicles to catch any toxicants (oils, greases, brake fluid) will be mandated when the vehicles have any potential to contribute toxic materials into aquatic systems.

- r. No surface application of nitrogen fertilizer will be used within 50 feet of any aquatic resource.

3. Instream Work

- a. Where appropriate, boundaries of the clearing limits will be flagged by the project inspector of ODOT. Ground will not be disturbed beyond the flagged boundary.
- b. Alteration of native vegetation will be minimized. Whenever trees or shrubs must be removed during the course of the project, the above ground portion of the vegetation will be pruned or cut so that the roots are left intact. This will reduce erosion while still allowing room to work.
- c. Riparian overstory vegetation removed will have a replacement rate of 1.5:1. Replacement will occur within the project vicinity where possible and within the watershed at a minimum.
- d. At the salt marsh restoration site, fill material will be sufficiently excavated to restore the daily tidal regime to the area. The restored low salt marsh will have 3:1 side slopes to an elevation of approximately 11.8 feet at the top edge of the restoration site. Lyngby's sedge, located immediately adjacent to the restoration area in Davis Slough, would likely be flushed into the restoration site by daily tidal action to form a dense ground cover. Cluster plants of salt marsh bulrush, hard-stem bulrush, and tufted hairgrass will be established at the edge of the restoration site to supplement the sedge and add diversity. An upland buffer around the wetland will be planted with Sitka spruce and coyote brush.

4. Monitoring

- a. NMFS requests monitoring of the restoration site. The purpose of this monitoring is to verify the daily tidal flushing and function of the restoration site. Factors examined would include, at a minimum, tidal inundation and deposition of sediment and other materials.
- b. All significant riparian replant areas and restoration actions will be monitored to insure the following:

- i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.
 - ii. Plantings are performed correctly and have an adequate success rate.
- c. Failed plantings and structures will be replaced, if replacement would potentially succeed. In cases of failed design, mitigation will generally be sought on another project, in a more appropriate location.
- d. Restoration site and plant monitoring will ensure that mitigation commitments have an adequate success rate to replace the functions they were designed to replace. ODOT Biology staff will produce a report once following construction, and then in year three and year five. The report will be provided to NMFS (Oregon Branch) for review.